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be modeled, wherein each reconstruction is comprised of a plurality of reconstruction points which correspond to a portion of the object's surfaces, and wherein collectively the 3D reconstructions comprise points that represent all of the object's surfaces; register each 3D reconstruction to a common coordinate system to produce an overall 3D reconstruction of the object's surfaces; and extract a surface representation of the object from the overall 3D reconstruction.

17. The computer-readable memory of claim 16, further comprising a program module which creates a texture map for the surface representation of the object using the inputted images depicting the surfaces of the object.

18. The computer-readable memory of claim 16, further comprising a program module for eliminating reconstruction points that are not representative of the object's surfaces which is executed prior to executing the program module for registering the 3D reconstructions, said reconstruction point elimination module comprising executing the following sub-modules for each 3D reconstruction:

calculating a separate mean distance for the reconstruction points in each of the three orthogonal directions from the origin of a 3D coordinate system associated with a camera used to capture the images employed in computing the reconstruction points;

calculating a variance of the reconstruction points in each of the orthogonal directions based on the mean computed for the respective direction;

eliminating points existing outside a region that extends the same distance both ways from the computed mean in each orthogonal direction to a total distance equal to a prescribed multiple of the computed variance for that direction;

re-executing both calculating sub-modules and the eliminating sub-module until the mean and variance in each orthogonal direction has not changed more than a prescribed amount from the last time these values were calculated.

19. The computer-readable memory of claim 16, further comprising a program module for eliminating reconstruction points that are not representative of the object's surfaces which is executed prior to executing the program module for registering the 3D reconstructions, said reconstruction point elimination module comprising executing the following sub-modules for each 3D reconstruction:

dividing a 3D space containing all the reconstruction points into voxels, each of which contains at least one of the reconstruction points;

selecting one of the voxels;

identifying a voxel neighborhood made up of the selected voxel and a prescribed number of voxels neighboring the selected voxel;

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counting the total number of reconstruction points contained within all the voxels of the identified voxel neighborhood;

eliminating the reconstruction points contained in the selected voxel whenever the number of points counted in the associated voxel neighborhood does not exceed a prescribed threshold number; and

selecting each remaining previously unselected voxel, in turn, and re-executing the identifying, counting and eliminating sub-modules for each newly selected voxel.

20. The computer-readable memory of claim 16, wherein the program module for extracting a surface representation of the object from the overall 3D reconstruction, comprises sub-modules for:

dividing a 3D space containing all the reconstruction points of the overall 3D reconstruction into voxels, each of which contains at least one reconstruction point;

selecting one of the voxels;

identifying a voxel neighborhood made up of the selected voxel and a prescribed number of voxels neighboring the selected voxel;

computing a plane for the selected voxel that best fits the reconstruction points contained within the identified voxel neighborhood;

selecting each remaining previously unselected voxel, in turn, and re-executing the identifying and computing sub-modules for each newly selected voxel; and

extracting a triangular-mesh representation of the surface of the object being modeled based on the planes defined for each voxel.

21. The computer-readable memory of claim 20, wherein the sub-module for extracting a triangular-mesh representation of the surface of the object being modeled, comprises sub-modules for:

(a) selecting one of the voxels containing reconstruction points;

(b) computing the triangle-mesh representation of the portion of the object having a surface that is partially contained in the selected voxel using a marching cubes procedure while keeping track of each voxel processed via the procedure;

(c) determining whether there are any remaining unprocessed voxels containing reconstruction points;

(d) selecting one of any remaining unprocessed voxels containing reconstruction points; and

(e) re-executing sub-modules (b) through (d) until there are no remaining unprocessed voxels containing reconstruction points.

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